Fisheries and Oceans Canada | Pêches et Océans Canada
Ecosystems and Oceans Science | Sciences des écosystèmes et des océans
Canadian Science Advisory Secretariat
Quebec Region | Science Response 2016/003

UPDATE OF MAIN INDICATORS OF THE STOCK STATUS OF GREENLAND HALIBUT IN THE GULF OF ST. LAWRENCE (4RST) IN 2015

Context

The stock assessment of Greenland Halibut (*Reinhardtius hippoglossoides*) in the Gulf of St. Lawrence (4RST) is conducted every two years, with the most recent assessment completed in February 2015. In interim years, a summary review of the resource's main indicators is made in order to determine whether major changes in the stock status would warrant more in-depth study prior to the planned assessment in the winter of 2017. This update was prepared to provide Fisheries Management with an overview of the most recent stock status.

This Science Response Report results from the Science Response Process from November 23, 2015 on the Stock Status Update of Greenland Halibut in 4RST. Additional publication from this meeting will be posted on the DFO Science Advisory Schedule as they become available.

Analysis

Commercial Fishery Performance

The fishing season was still ongoing at the time of this update. On November 24, 2015, directed fishery landings of Greenland Halibut with fixed gear was 3 298 t out of a potential allocation of 3 750 t, or 88% of this allocation. There was no directed Greenland Halibut gillnet fishing activity north of Anticosti in 2015 (Figure 1).

The commercial catch per unit of effort (CPUE) is used as an index of fishery performance and not as an index of abundance of exploitable stock. This index is standardized to account for changes based on NAFO subarea, soak time and seasonal pattern. In 2015, the CPUE continued to increase in the western Gulf, reaching the highest value observed since 1999 (Figure 2). The CPUE in Esquiman remained low, far below the series average. There was no fishing activity in the area north of Anticosti in 2015.

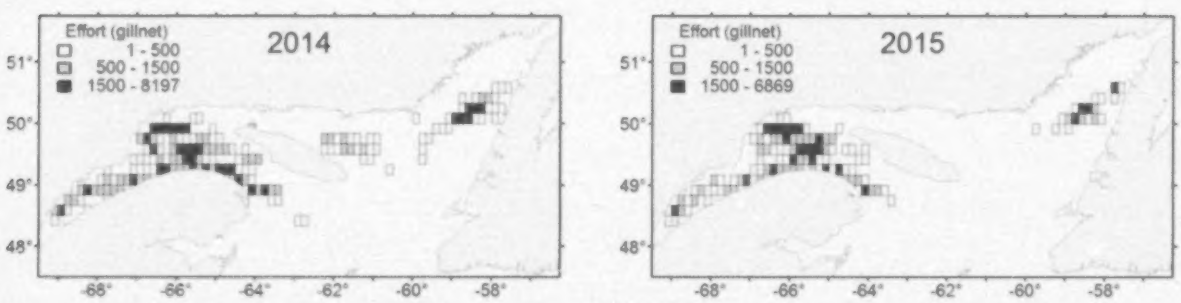

Figure 1. Distribution of the directed Greenland Halibut fishing effort, total number of gillnets hauled per statistical square in 2014 and 2015 (partial data, some catches are not geo-referenced).

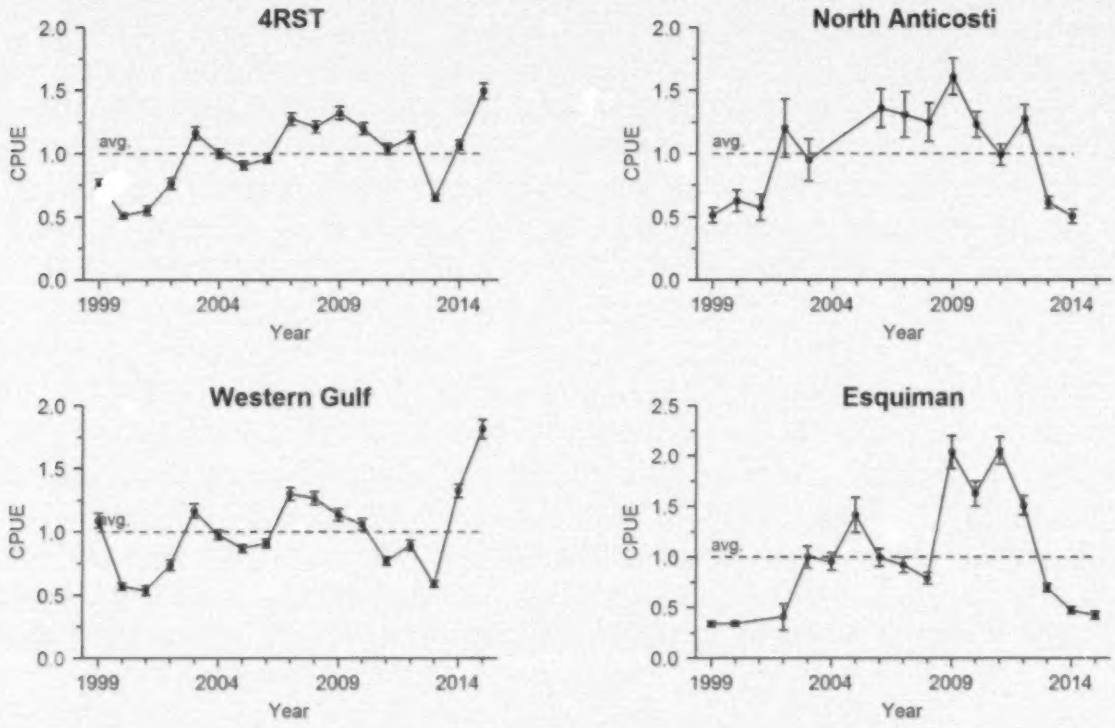

Figure 2. Standardized indices of Greenland Halibut commercial fishery performance for the Gulf (4RST) and per fishing regions.

Stock Status Indicators

The biomass index from the 2015 DFO survey was slightly above the historical average and comparable to the value observed in 2014 (Figure 3). The biomass index from the sentinel fisheries program decreased in 2015 and was comparable to 2011–2013. This survey does not cover the estuary, an important Greenland Halibut distribution area.

The abundance of one-year-old fish (0–20 cm) remained high in 2015 in the DFO survey (Figure 4), and the abundance of two-year-old fish (20–30 cm) increased to its highest value in the historical series. The index of fish 30–40 cm increased in 2015, but remained slightly below average. Lastly, the abundance of fish over 40 cm (i.e. fish available to the fishery in 2016) decreased in 2015 but was above the average abundance.

The 2015 size frequency distributions showed that two-year-old fish, the 2013 cohort, had a modal length of 22 cm, while the average length for fish of this age is 26 cm (Figure 5). This cohort does not seem to have grown as much as usual over the past year. About 40% reduced growth was observed for this cohort. This was the first time in 25 years that this phenomenon has been observed.

The 2012 to 2014 cohorts were very strong and should be recruited to the fishery starting in 2018 (Figure 6).

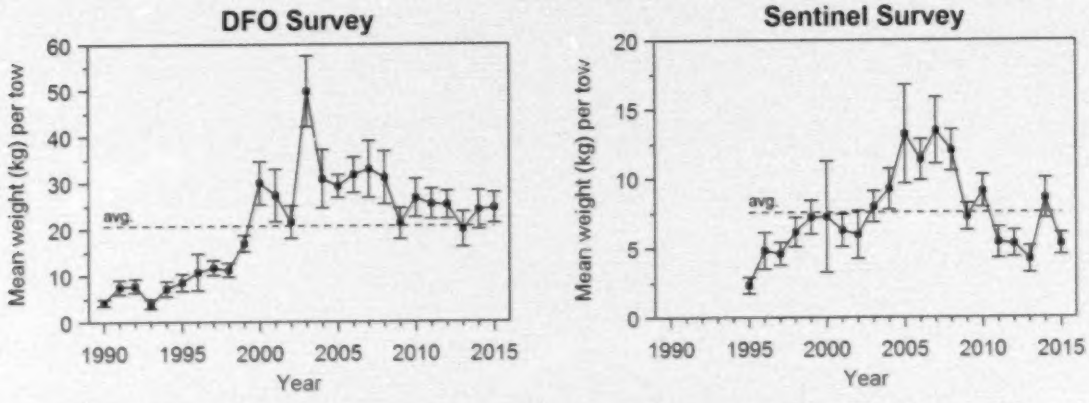

Figure 3. Mean weight of Greenland Halibut per tow observed in DFO and Sentinel Fisheries surveys.

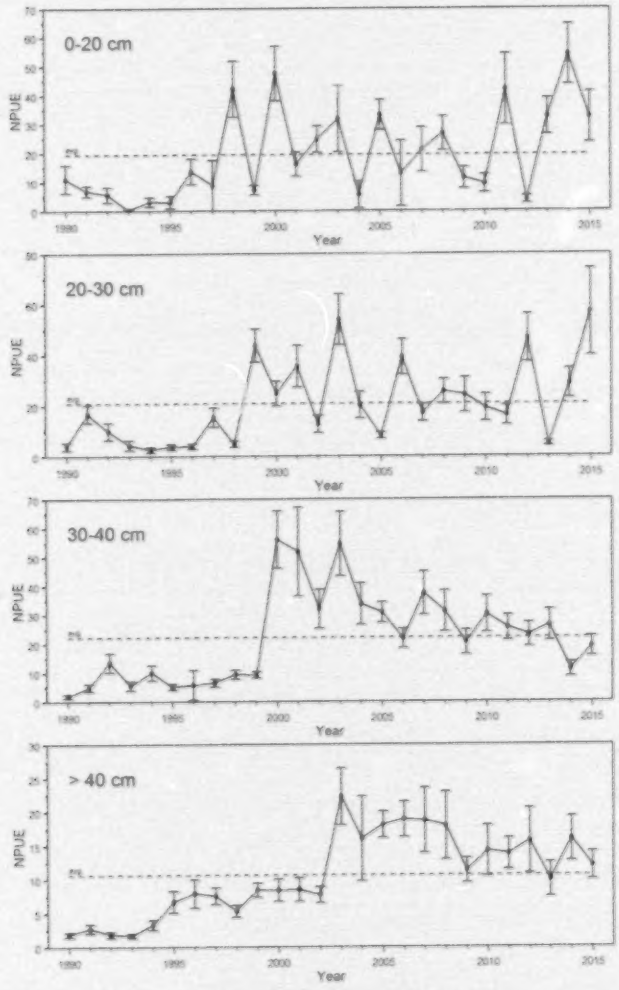

Figure 4. Abundance indices (number per unit of effort) of Greenland Halibut for the different size categories observed in the DFO survey.

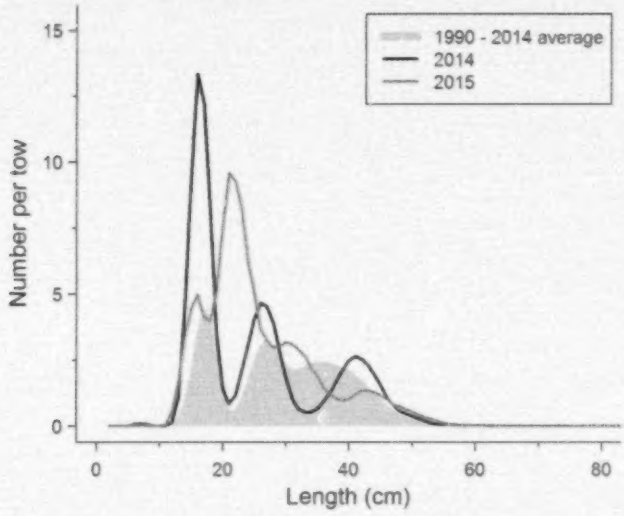

Figure 5. Size frequency distribution of Greenland Halibut observed during DFO survey.

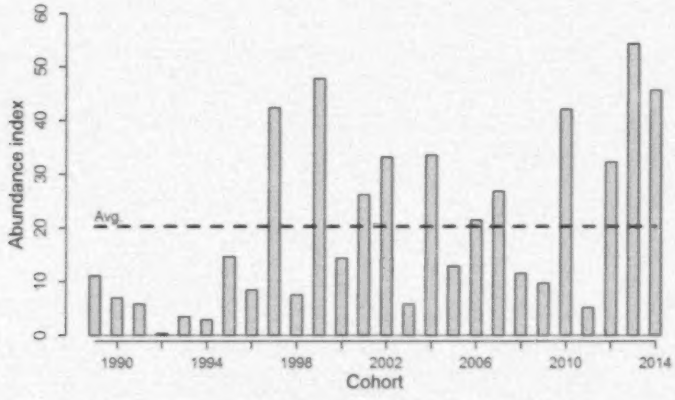

Figure 6. Recruitment index of Greenland Halibut measured for each cohort at age 1 on the DFO survey.

Conclusions

Since 2014, the performance of the fishery has been very different in the western Gulf compared to the area north of Anticosti and Esquiman. The CPUE was high in the western Gulf but remained low in Esquiman and north of Anticosti. There was no fishing activity north of Anticosti in 2015.

Indicators from research surveys in 2015 confirmed the conclusion of the latest Science Advisory Report, which was that, in the short term, there is likely to be a slight decrease in the abundance of commercial-sized fish, but in the medium term the forecast is more optimistic.

Particular attention should be paid to the reduced growth and diminished condition of juveniles in the coming years.

There were no major changes to the main Greenland Halibut stock status indicators in the Gulf of St. Lawrence compared to the February 2015 assessment.

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Date: January 5, 2016

Sources of information

This Science Response Report results from the Science Response Process from November 23, 2015 on the Stock Status Update of Greenland Halibut in 4RST. Additional publication from this meeting will be posted on the DFO Science Advisory Schedule as they become available.

DFO. 2015. Assessment of Greenland Halibut in the Gulf of St. Lawrence (4RST) in 2014. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2015/056.

This Report is Available from the:

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ISSN 1919-3769
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Correct Citation for this Publication:

DFO. 2016. Update of main indicators of the stock status of Greenland Halibut in the Gulf of St. Lawrence (4RST) in 2015. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/003.

Aussi disponible en français :

MPO. 2016. Mise à jour des principaux indicateurs de l'état du stock de flétan du Groenland du golfe du Saint-Laurent (4RST) en 2015. Secr. can. de consult. sci. du MPO, Rép. des Sci. 2016/003.